EXHIBIT A

SCOPE OF SERVICES

FOR

FINANCIAL PROJECT ID(S). 440269-1-22-01

FDOT DISTRICT 5
I-75 & I-95 RAMPS METERING STUDY
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1 PURPOSE

The purpose of this contract is for the Consultant to provide the District 5 TSM&O and Planning Offices with a study that incorporates TSM&O elements along with capacity improved into select interchanges along I-75 and/or I-95 that demonstrates the value of the combined investments over a capacity improvement alone. This study will target the effects of TSM&O and practical design processes to previously capacity only recommended solutions.

Ramp Metering is one example of a potential TSM&O strategy. Unconstrained network conditions could then be replaced with a clear capacity constraint and geometry features changed to align a consistent approach to the system versus localized capacity evaluation and implementation.

The use of Ramp metering during the planning process had been limited to alternative assessments based on static assumptions of Measure of Effectiveness (MOEs) and demand. This study will set parameters to use Ramp Metering and other Intelligent Transportation System (ITS) technologies and a more dynamic method to develop design traffic, MOEs, and prioritize improvements to achieve a practical and consistent network.

Ramp metering has been recognized as an effective freeway management strategy to avoid or improve freeway traffic congestion by controlling access to the freeway. Ramp metering is used to maintain an efficient freeway system and protect the investment made in freeways by keeping them operating at or near capacity.

Practical Design tools provide flexible parameters to appropriately allocate limited resources to maximize system-wide improvements. These tools allow design teams to be confident that a particular solution is sufficient to improve the transportation system, without being excessive.

This study will expand the I-75 and I-95 System Operational Analysis Report (SOAR). The consultant shall make a comprehensive research of available data, including SOARs, to identify where a Ramp metering study is needed. I-75 and I-95 System Operational Analysis Report (SOAR) had been used to identify interchanges that need long term improvements along these corridors. This Ramp Metering study will focus on those Interchanges on need of Long Term improvements. Below is a list with Interchanges along I-75 and I-95 within Florida Department of Transportation District five boundaries. On bold are those interchanges where Long Term Improvements had been identify through the SOAR.

**I-75** (Roadway Id: 18130000 and 36210000)

<table>
<thead>
<tr>
<th>Location</th>
<th>Interchange Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR 476B</td>
<td>PARTIAL DIAMOND</td>
</tr>
<tr>
<td>SR 48</td>
<td>DIAMOND</td>
</tr>
<tr>
<td>CR 470</td>
<td>DIAMOND</td>
</tr>
<tr>
<td>SR 91/TURNPIKE</td>
<td>DIRECT CONNECTION DESIGN</td>
</tr>
<tr>
<td>SR 44</td>
<td>DIAMOND</td>
</tr>
<tr>
<td>CR 484</td>
<td>DIAMOND</td>
</tr>
<tr>
<td>SR 200</td>
<td>DIAMOND</td>
</tr>
<tr>
<td>SR 40</td>
<td>DIAMOND</td>
</tr>
</tbody>
</table>
STAGE II
May 03, 2017
- US 27/SR 500 DIAMOND
- SR 326 DIAMOND
- CR 318 DIAMOND

I-95 (Roadway Id: 70220000, 70225000, 7900200 and 73001000)

<table>
<thead>
<tr>
<th>Location</th>
<th>Interchange Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR 514/MALABAR RD</td>
<td>DIAMOND</td>
</tr>
<tr>
<td>CR-516/PALM BAY RD</td>
<td>DIAMOND</td>
</tr>
<tr>
<td>SR 500</td>
<td>DIAMOND</td>
</tr>
<tr>
<td>SR 518</td>
<td>DIAMOND</td>
</tr>
<tr>
<td>PINEDA CSWY</td>
<td>DIAMOND</td>
</tr>
<tr>
<td>CR 509/WICKHAM RD</td>
<td>DIAMOND</td>
</tr>
<tr>
<td>SR 519/FISKE BLVD</td>
<td>QUADRANT CLOVERLEAF</td>
</tr>
<tr>
<td>SR 520 PARTIAL</td>
<td>DIAMOND</td>
</tr>
<tr>
<td><strong>SR 524</strong></td>
<td>DIAMOND</td>
</tr>
<tr>
<td>SR 528</td>
<td>QUADRANT CLOVERLEAF</td>
</tr>
<tr>
<td>PORT ST JOHN PKWY</td>
<td>DIAMOND</td>
</tr>
<tr>
<td>SR 407</td>
<td>QUADRANT CLOVERLEAF</td>
</tr>
<tr>
<td>SR 50</td>
<td>DIAMOND</td>
</tr>
<tr>
<td>SR 406</td>
<td>DIAMOND</td>
</tr>
<tr>
<td>SR 46</td>
<td>DIAMOND</td>
</tr>
<tr>
<td>CR 5A</td>
<td>DIAMOND</td>
</tr>
<tr>
<td>SR 442</td>
<td>DIAMOND</td>
</tr>
<tr>
<td>SR 44</td>
<td>DIAMOND</td>
</tr>
<tr>
<td><strong>SR 421</strong></td>
<td>DIAMOND</td>
</tr>
<tr>
<td>SR 400</td>
<td>QUADRANT CLOVERLEAF</td>
</tr>
<tr>
<td>US 92/SR 600</td>
<td>QUADRANT CLOVERLEAF</td>
</tr>
<tr>
<td>LPGA BLVD</td>
<td>QUADRANT CLOVERLEAF</td>
</tr>
<tr>
<td>SR 40</td>
<td>DIAMOND</td>
</tr>
<tr>
<td><strong>US 1/SR 5</strong></td>
<td>QUADRANT CLOVERLEAF</td>
</tr>
<tr>
<td>OLD DIXIE HWY</td>
<td>DIAMOND</td>
</tr>
<tr>
<td>SR 100</td>
<td>DIAMOND</td>
</tr>
<tr>
<td>PALM COAST PKWY</td>
<td>DIAMOND</td>
</tr>
<tr>
<td>MATANZAS WOODS PKWY</td>
<td>DIAMOND</td>
</tr>
</tbody>
</table>

The consultant will provide a final comprehensive report that will contain all essential technology information, future geometry, final recommendations, and benefit to cost comparison of capacity.
2 STUDY OBJECTIVE

The CONSULTANT is to study the effects of I-75 & I-95 Ramp Metering implementation on future Geometry. The below tasks had been identify to study the effects of Ramp Metering as a practical design tool.

- **Data Collection** - includes gathering data on pertinent corridor physical features and conditions which will help to better understand the existing ramp segments under consideration.

- **Interchange(s) Selection** – The CONSULTANT will be responsible developing a logical method of determining preferred interchange(s) for evaluation and present it to the Department. Upon approval the CONSULTANT shall conduct the analysis and present to the Department the recommended interchanges for further exploration.

- **Interchange Needs and TSM&O Strategy Determination** - CONSULTANT will be responsible developing a logical method of determining the needs of the preferred interchange(s) and present it to the Department. Upon approval the CONSULTANT shall TSM&O Strategies and present to the Department the recommended TSM&O Strategies for further exploration.

- **Literature Search** – The CONSULTANT will look for best practices throughout the industry and research community. The review of literature will be documented and submitted to the Department.

- **Public Input #1** – Present and receive public support via local agency and other significantly effected stakeholders for the needs and strategies that are under consideration. Adjust strategies to meet ensure meeting the needs of the community.

- **Demand Traffic** – The CONSULTANT will determine the size of the network, analysis years, mode type, model type, and other methodology variable considering the types of strategies that are likely to be will be evaluated. Upon approval the CONSULTANT shall develop the design traffic.

- **Concept Development** - During the concept development the following tasks will need to be completed:
  - Determine performance measures to evaluate the alternatives
  - Develop geometry changes needed for improvements for TSM&O Strategy and Capacity
  - Analysis of alternatives based on different operating scenarios and different demand scenarios.
Present findings to the Department
Iterate as needed

• **Public Input #2** – Present and receive public support via local agency and other significantly effected stakeholders for findings of the concept analysis. Adjust concepts as needed to meet ensure meeting the needs of the community.

• **Summarize and Document** - Evaluate and compare the cost effectiveness and other MOEs of TSM&O and capacity implementation vs capacity only. Develop Concept of Operations. Review the District architecture and edit the turbo file as required to include the project. Begin drafting a SEMP if appropriate.

• **Develop Guidance** - Guidance for the use of Ramp metering and other ITS alternatives as a practical design tool during the planning process shall be developed to allow replication of the work completed as part of this study.

### 3 GENERAL REQUIREMENTS

#### 3.1 Liaison Office

The DEPARTMENT will designate a Liaison Office and a Project Manager who shall be the representative of the DEPARTMENT for the Project. While it is expected the CONSULTANT shall seek and receive advice from various State, regional, and local agencies, the final direction on all matters of this Project remain with the Project Manager.

#### 3.2 Key Personnel

The CONSULTANT’S work shall be performed and directed by the key personnel identified in the proposal presentations by the CONSULTANT. Key personal knowledge and experience should include but not be limited to project management, Intelligent Transportation Systems, Traffic Engineering Studies, Traffic Signal Timing, etc. Any changes in the indicated personnel shall be subject to review and approval by the DEPARTMENT.

#### 3.3 Meetings and Presentations

The CONSULTANT shall be required to attend Meetings with DEPARTMENT representatives, where relevant project information will be provided by the DEPARTMENT, along with procedures for administering the contract. The CONSULTANT and supporting staff shall also be available with no more than a five (5) workday notice to attend meetings or make presentations at the request of the DEPARTMENT. Such meetings and presentations may be held at any hour between 8:00 A.M. and 12:00 midnight on any day of the week. The CONSULTANT may be
called upon to provide maps, press releases, advertisements, audiovisual displays and similar material for such meetings.

3.4 Correspondence

Copies of all written correspondence between the CONSULTANT and any party pertaining specifically to this study shall be provided to the DEPARTMENT for their records within one (1) week of the receipt of said correspondence.

3.5 Coordination with Other Consultants and Entities

The CONSULTANT is to coordinate their work with any ongoing and/or planned projects that may affect this study. The CONSULTANT is to coordinate with local governmental entities to ensure design requirements for the project are compatible with local public works improvements. The CONSULTANT is to coordinate with any agencies and/or entities that require further coordination.

3.6 Submittals

The CONSULTANT shall provide electronic and hard copies of the required documents as listed below. These are the anticipated printing requirements for the project. This tabulation will be used for estimating purposes, and the Project Manager will determine the number of copies required prior to each submittal.

- Stakeholder Involvement Plan
- Meeting Minutes
- Action Items with status
- Literature Review
- Update Turbo Architecture
- ConOps, Preliminary
- System Engineering Management Plans
- Technical Memo and Requirement Documents
  - Interchange Selection Report
  - TSM&O Strategy Report
  - Demand Traffic Report
  - Concept Development
  - Recommend Alternatives with phase specific cost
- Process Documentation
  - Stating the benefits of TSM&O Strategies as a Practical Design Tool
  - Benefits/ Cost Analysis
  - Stating the outcome of the recommended alternatives
  - Methodology to get to those alternatives
4 STAKEHOLDER INVOLVEMENT

Local maintaining agencies involvement includes communicating to and receiving input from all interested persons, groups, and government organizations regarding the development of the project. The CONSULTANT shall coordinate and perform the appropriate level of stakeholder involvement for this project.

Stakeholder Coordination - The CONSULTANT will coordinate with the following stakeholders: FDOT District 5 Traffic Ops and PIO, Cities and Counties along I-75 and I-95 District 5 boundaries, Metro Plan, AAM Operations, Florida Highway Patrol (FHP), and Police Departments.

4.1 Stakeholder Involvement

The CONSULTANT will assist the DEPARTMENT in coordinating the time and place to meet with all stakeholders. CONSULTANT shall prepare an agenda and take appropriate meeting minutes which includes action items.

4.2 Quality Assurance/Quality Control

The CONSULTANT shall be responsible for insuring that all work products conform to DEPARTMENT standards and criteria. This shall be accomplished through an internal Quality Control (QC) process performed by the CONSULTANT. This QC process shall insure that quality is achieved through checking, reviewing, and surveillance of work activities by objective and qualified individuals who were not directly responsible for performing the initial work.

Prior to submittal of the first invoice, the CONSULTANT shall submit to the DEPARTMENT'S Project Manager for approval the proposed method or process of providing Quality Control for all work products. The Quality Control Plan shall identify the products to be reviewed, the personnel who perform the reviews, and the method of documentation.
5 REGIONAL ITS ARCHITECTURE (RITSA)

The consultant will be tasked with the Systems Engineering Management Plan (SEMP) and will update the Regional Architecture file to ensure that adaptive Ramp Metering is included. The Regional Architecture helps define the elements of the ITS system and the standard information that is exchanged between these elements; the guidelines for developing a Regional Architecture are defined in the National ITS Architecture. The Consultant will develop a PITSA (Project ITS Architecture) which shows the alternatives that are chosen and update the Turbo Architecture file for the region. The architecture shall be based on the National ITS Architecture, and will complement FDOT’s Regional ITS Architecture. The document shall include the support needed from each stakeholder for resolution.

The Consultant will review both the existing National ITS Architecture for identification of any new applicable market packages as well as the existing Statewide Florida ITS Architecture as it applies to District 5. Given Florida has an existing process for updating the SITSA through the Change Management Board, the Consultant will discuss with both the steering committee and the FDOT ITS Representative(s) the process by which any updates to the SITSA are considered by the Change Management Board (CMB).

6 CONCEPT OF OPERATIONS

The Consultant will provide a Concept of Operations that defines the roles and responsibilities for development and implementation of the I-75 and I-95 Ramp Metering and also includes the level of information sharing, status and control between agencies. The document shall include the support needed from each stakeholder for resolution.

The Concept of Operations (CONOPS) provides an overview of the project/system to be deployed; specific details as to the current system; the transportation situation being addressed; identification of any desired changes, assumptions and constraints or operational issues; specifics on using/operating the project/system; methods to train and involve stakeholders; and requirements for project/system support and maintenance. In order for the CONOPS to be most effective, the document will be updated as elements change or are added/deleted. Stakeholders, or parties who will have an interest in or participate in the project or system, will be consulted to determine their needs and preferences.

The CONOPS will summarize the needs and preferences of each stakeholder and how they will interact and utilize the project/system. In some instances where conflicts between the needs and preferences of various stakeholders arises, the CONOPS document will address these conflicts and document the resultant outcome of which items will be implemented by the project or system and which items have been considered but will not be included. Ultimately, the CONOPS will serve as a record of the project/system needs, requirements, interactions, agreements and constraints in regard to all parties involved from the conception through maintenance of the desired product.

The Consultant will meet with each of the stakeholders upon project award to discuss their project roles and needs to determine if the existing CONOPS accurately reflects the current state of the anticipated development and implementation. The document will also be reviewed by the
Consultant to determine if any suggestions can be made regarding possible changes to technologies or operational concepts described throughout the CONOPS, which could provide equal or better results with less initial and future maintenance costs. Suggestions will be forwarded to the Project Manager for consideration and any approved changes would be added to the CONOPS via a document revision.

7 ESTIMATES
The CONSULTANT will generate a cost estimate as described within the table below. The study should evaluate the cost vs. value. The CONSULTANT shall develop construction cost estimates and updates for design alternatives. The cost estimates are to be developed using the Department’s long range estimating (LRE) program.

<table>
<thead>
<tr>
<th>Description</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>3</td>
</tr>
<tr>
<td>Operation</td>
<td>5</td>
</tr>
<tr>
<td>Maintenance</td>
<td>5</td>
</tr>
</tbody>
</table>

8 LEGAL COMPLIANCE
The CONSULTANT will verify that all data collection, analysis and requirements comply with the Legal rules and regulations.

9 COORDINATION WITH THE DEPARTMENT
All aspects of this CONTRACT/AGREEMENT and/or of each authorization or task will be coordinated through the DEPARTMENT’s Project Manager (or his/her designee).

All authorizations and approvals shall be in writing and executed by the DEPARTMENT prior to the commencement of work.

The DEPARTMENT’s Project Manager for this project is Noemi S Rodriguez. Located at: Florida Department of Transportation District 5 Traffic Operations 719 South Woodland Blvd Deland, FL 32720

In the DEPARTMENT’s Project Manager’s temporary absence from the office, the DEPARTMENT shall authorize another individual to perform the DEPARTMENT Project Manager’s duties.

The DEPARTMENT may replace the DEPARTMENT’s Project Manager (or his/her designee) at any time during the term of this CONTRACT / AGREEMENT.
10 INVOICING LIMITS

Payment for the work accomplished shall be in accordance with Method of Compensation of this contract. Invoices shall be submitted to the DEPARTMENT, in a format prescribed by the DEPARTMENT. The DEPARTMENT Project Manager and the CONSULTANT shall monitor the cumulative invoiced billings to ensure the reasonableness of the billings compared to the project schedule and the work accomplished and accepted by the DEPARTMENT.

The CONSULTANT shall provide a list of key events and the associated total percentage of work considered to be complete at each event. This list shall be used to control invoicing. Payments will not be made that exceed the percentage of work for any event until those events have actually occurred and the results are acceptable to the DEPARTMENT.